

Patent Abstracts of Japan

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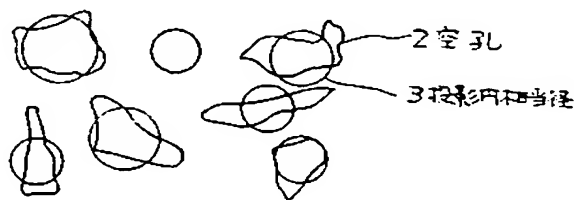
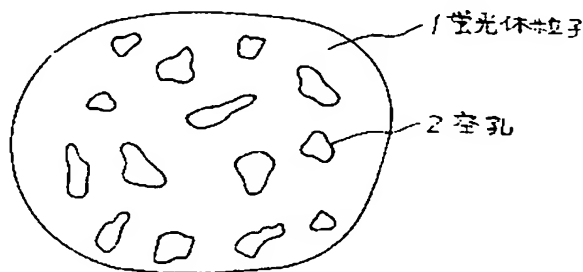
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APPLICANT : TOSHIBA ELECTRON DEVICE ENG
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TITLE : ELECTROLUMINESCENT PHOSPHOR
AND ELECTROLUMINESCENT
ELEMENT



ABSTRACT : PURPOSE: To provide an electroluminescent phosphor which can give an electroluminescent element having a high luminance and a long life and requiring only a reduced electric power by forming holes having a specified equivalent diameter of the equal projected area circle on the surface of a particle of a zinc sulfide-based phosphor.

CONSTITUTION: A mixture of zinc sulfide-based phosphor with an oxide, such as ZnO, Sb₂O₃, SnO₂ or PbO, is heat-treated at 600-900°C and washed with an aqueous solution of a mineral acid, such as hydrochloric, nitric or sulfuric acid, to form holes 2 on the surface of a phosphor particle 1 to increase its specific surface area. In this way, an electroluminescent phosphor having holes 2 of an equivalent diameter 3 of the equal projected area circle or 0.1-2μm on the surface of the phosphor particle 1 and having an excellent efficiency of and electroluminescent luminance per applied voltage and a long half-life of the luminance can be produced. By mixing at least 20wt.%, based on the total phosphors forming a light-emitting layer, this phosphor, an electroluminescent element requiring only a reduced voltage of driving can be obtained.

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